**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**
**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

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| In re Application of: | Confirmation No. 9712 |
| G. W. Hannaway | Art Unit: 2152 |
| Serial No.: 09/742,165 | Examiner: Duyen M. Doan |
| Filed: December 20, 2000 | Customer No. **25235** |
| For: **WEBCASTING METHOD AND SYSTEM FOR TIME-BASED SYNCHRONIZATION OF MULTIPLE, INDEPENDENT MEDIA STREAMS** | Docket No. GWHA0001 |

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P.O. Box 1450
Alexandria, VA 22313-1450

**APPEAL BRIEF UNDER 37 CFR § 41.37**

## I. Real Party in Interest

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## II. Related Appeals and Interferences

No other appeals or interferences are currently known to Appellant that will directly affect, be directly affected by, or have a bearing on the decision to be rendered by the Board of Patent Appeals and Interferences in the present appeal.

## III. Status of Claims

Claims 1, 3-15, 17-20, 22, 23, and 25-30 are pending in the application, with claims 2, 16, and 24 being cancelled. No claims have been allowed. The rejection of claims 1, 3-15, 17-20, 22, 23, and 25-30 is the subject of this appeal.

## IV. Status of Amendments

No claim amendments were filed subsequent to the final rejection mailed July 26, 2006, and all claim amendments have been entered.

Claims 1, 3-15, 17-20, 22, 23, and 25-30 are provided in the attached Claims Appendix.

## V. Summary of Claimed Subject Matter

Claims 1, 15, and 20 are independent claims that are being appealed.

Claim 1 is directed to a synchronization system for time-based synchronization of streaming media transmitted over a communications network. Referring to Appellant's specification, a webcast system 100 is shown in Figure 1 that is adapted for webcasting and is shown to include a number of streaming media sources 130, 150, 160 that provide streaming media inputs 112, 140 that may be subjected to varying transmission delays as they are transmitted over the communication network 138 or the Internet 144. A streaming media synchronization system 110 as called for in claim 1 is shown as part of the webcast system of Figure 1 for generating time-synched media signals 114 by processing the streaming media inputs 112 from multiple sources. An exemplary embodiment of the synchronization system 110 is shown in detail in Figure 2.

The synchronization system of claim 1 includes "an input interface" that acts to receive first and second media stream from first and second media sources with each media stream including a "streaming video portion." As shown in Figure 2, two input streams 112 are received such as from sources 150, 160 (and/or source 130) by I/O interface 210 and the inclusion of video in the stream is discussed at least at page 11, lines 7-21. The system of claim 1 further includes first and second data buffers that store the data packets from the two media streams as shown at 222, 224 of Figure 2 and as explained in the paragraph beginning at line 9 of page 16.

The synchronization system of claim 1 includes a controller "linked to the first and second data buffers for selectively retrieving the data packets of the first and second media streams to form a first and a second time-adjusted stream, wherein the controller determines a

variable transmission delay" for the streams from the sources to the input interface and uses this variable transmission delay to decide when to retrieve the buffered packets. Further, the controller is configured "for mixing the first and second time-adjusted streams into a composite media stream wherein the first and second time-adjusted streams are synchronized based on time." An exemplary controller is shown by the controller and media processor 230 and 240 of Figure 2 that act to mix time-adjusted streams 234 to output a composite stream 114. This important aspect of the system of claim 1 is explained in detail in Appellant's specification from page 15, line 16 to page 16, line 22. As explained, the variable transmission delay is determined for each of the received media streams using an external timing reference such as reference 120 and a time stamp or information in the received stream, and the determination may be done once for a stream or file or two or more times for a stream or file. As can be seen from the language of claim 1 and this portion of the specification, the controller acts to both synchronize two media streams that include a video portion and to mix the two streams into a single composite media stream in which the video portion from differing sources is time-synchronized (e.g., as might be used to create side-by-side screens of live broadcasts from differing sources and/or geographic locations or picture-in-picture effects where the two streams are accurately time synchronized).

Independent claim 15 is directed to an apparatus for synchronizing media streams transmitted over a communication network. As with the system of claim 1, the streaming media synchronization system 110 shown as part of webcast system 100 in Figure 1 and in more detail in Figure 2 is a representative embodiment of the claimed apparatus. The apparatus of claim 1 includes an input interface, such as I/O interface 210, that acts to receive media streams transmitted by first and second media sources over a communications network. In contrast to claim 1, the media streams are encoded to first and second compression standards that differ. As explained beginning at page 14, line 18, the compressed streams 212 received by the I/O interface 210 may be formatted "under different, incompatible compression standards and formatting schemes." In this regard, claim 15 calls for the apparatus to include a decoder that decodes the two received streams into intermediate streams that "are compatibly formatted." The decoder may be the parsing and decoding manager 216 shown in Figure 2 that functions to "output compatible or codec neutral streams 220" as explained at lines 20-23 of page 14.

Claim 15 further calls for a streaming media processor, such as processor 240 shown in Figure 2, for "mixing the first and the second intermediate-format media streams into a composite media stream encoded according to an output compression standard." For example, the streams 234 that are formed from codec neutral streams 220 may be mixed into a composite media stream 114 using an output compression standard, with operation of the processor 240 explained at least at page 20, line 22 to page 21, line 21. The apparatus of claim 15 further includes a controller such as controller 230 of Figure 2 that determines a variable transmission delay for the two received media streams as discussed with reference to claim 1. Claim 15 further calls for the determination to be done based on transmission and receipt times for a particular data packet in each stream as discussed at page 16, lines 1-10.

Independent claim 20 is directed to a method with limitations similar to those of claim 1 but presented in method form. Hence, the summary of claim 1 is applicable to claim 20. Claim 20 further specifies that the time-adjusted streams 234 are created by correcting for the two determined transmission delay values by "matching the data packets of the first and second media streams based on transmittal times from the first and the second media sources." This type of matching is explained in Appellant's specification from line 9, page 16 to at least line 7, page 18. Claim 20 also calls for creating a synchronized media stream (e.g., mixing by processor 240 to create composite stream 114) by "mixing" the two media streams and requires that the first and second media streams "are presented in the synchronized media stream concurrently" rather than sequentially or serially. This concurrent presentation is discussed at least in the paragraph beginning at line 15, page 21 (e.g., two or more live webcasts may be shown in separate windows or screens with proper time synchronization).

## VI. <u>Grounds of Rejection to be Reviewed on Appeal</u>

Claims 1, 3-15, 17-20, 22, 23, and 25-30 stand rejected under 35 U.S.C. §103.

## VII. Argument

### Rejection of Claims 1, 3-6, 8, 11-15, 17-20, 22, 23, and 25-30 is Improper Under 35 U.S.C. §103 Based on Freeman and Schuster

In the final Office Action of July 26, 2006, claims 1, 3-6, 8, 11-15, 17-20, 22, 23, and 25-30 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. Appl. Publ. No. 2002/0129374 ("Freeman") in view of U.S. Pat. No. 6,360,271 ("Schuster"). This rejection is traversed based on the following remarks, and Appellant requests that the rejection be reversed as not properly supported. The following remarks begin with a general explanation of the differences between the teaching of the primary reference Freeman and Appellant's invention. This introductory explanation is followed by a detailed explanation of why Freeman when considered in light of Schuster fails to teach or suggest the claimed invention. These explanations were substantially provided in Appellant's September 18, 2006 Amendment.

Before turning to specific claim language, it may be useful to more generally describe some of the significant differences between Appellant's invention and the technologies described in Freeman. Appellant's system is effective for mixing received streams with video portions that have been streamed over differing networks and/or different network paths. This is important where two or more sources of video streams are being combined into a single stream. Video time-based synchronization requires synchronization in the 100 nanosecond or lower range with higher definition requiring even higher levels of synchronization. In part, this is because video mixing may involve superimposition of two images or fading one into another or cutting a hole and then matting another into the hole (e.g., mixing, matting, keying, and the like). For example, a live stream of a news or weather anchor may be keyed into a hole created in another live stream (e.g., a stream of live action video or weather map or the like) during mixing operations. Such mixing may involve mapping video streams on a pixel by pixel basis or even fractions of pixels (e.g., image element in one stream to an image element in another stream). Such video mixing is often orders of magnitude more accurate than that required to match an audio signal to a video signal. Prior to the invention as noted in Appellant's Background, the problems associated with such mixing of media streams transmitted over the Internet and other networks had not been addressed, and one solution was to simply display video streams separately (e.g., avoid mixing) or at most try to synchronize a sound stream with a video stream but again without

mixing. Note also that the difference between mere multiplexing of video streams and the mixing described by Appellant was explained in detail in Appellant's September 12, 2005 Amendment.

There are numerous differences between the time-based mixing of received signals as taught by Appellant and the teaching of Freeman. Generally, Freeman explains in its Background that the methods described are for providing improved "seamless **switching** between compressed digital video signals in a low cost digital set top environment" with the video signals being received in a multiplexed signal form at the receiver or set top box. As discussed in the Summary, multiple video signals are combined by a multiplexer for transmission on desired channels such as over a cable or satellite transmission system. According to the Summary, the video streams are encoded and time synchronized **prior to compression at the single source prior to transmittal** over a single media or network (such as media 6 in Figure 1) (see, for example, para. [0028]). For example, splice points may be added to each of the video streams prior to compression and multiplexing to make later switching between the separate streams at an end user, with the splice points being time synchronized at the source or transmittal point. In other words, Freeman is directed to providing an improved way to switch or cut to a different video stream and is not concerned at all with mixing two or more video streams into a single video stream. Appellant provides methods and systems that combine two or more video streams received from differing sources (e.g., over differing networks or paths) and with differing transmission times or delays into a single stream in which the streams are synchronized (e.g., mapped pixel to pixel in some cases) based on transmission time from their sources. In contrast, Freeman teaches controlling the source to encode time-synched splice points in video streams prior to multiplexing, which requires the use of a single transmission point and control over all sources of video received by an end user.

Operation of Freeman's system is explained well with reference to Figures 5 and 6 beginning with para. [0101]. As discussed in a summary paragraph [0112], "seamless switching at the decoder is facilitated at the encoder 312 by time synchronizing the signals, time locking the encoders and creating a time gap 340 to each of the digital video streams." Figure 5 shows a system provided at **a single transmission location** and the encoders 312 are time synchronized

to allow the splice points or time gaps to be provided to allow seamless switching between the four video streams that are multiplexed by multiplexer 324 after encoding/compression by encoders 312. The multiplexed signals are then transmitted by transmitter 328 to an end user (see Figure 7 or Figure 1). As can be seen, any time synchronization occurs at the transmission source and not at an interface where the streams are received after being transmitted over one or more transmission networks that will cause them to be subjected to variable transmission delays. Also, it can be seen that the video signals are not combined into a single mixed stream but are instead simply multiplexed for later selection or switching by an end user.

Other differences between Appellant's invention and Freeman become apparent from reading Freeman's Description of the Preferred Embodiments. For example, paragraph [0054] discusses the use of multiple data compressors 3 but there is no teaching that these compressors utilize different compression standards and no discussion is provided of decoding differing standards at the end user's system. In fact, Figure 5 shows with encoders 312 that provide signals that apparently are compatible since they are multiplexed by multiplexer 324. Beginning at para. [0081], Freeman discusses an embodiment that enables seamless flicker-free transparent switching between the signals. In para. [0083], the seamless switch is described as being "between two or more separate digital video signals," which reinforces the construction that the transmitted signals are merely multiplexed but separate signals and are not mixed into a single signal prior to transmission. Significantly, at the end of para. [0084] and into para. [0085], Freeman teaches that seamless splicing between two video streams is supported by switching in "the digitally compressed domain thereby eliminating the need to decode two" streams at the same time and the compressed video information is placed in a buffer to minimize the size of such buffer. In contrast, Appellant shows is Figure 2 that the codec neutral streams are placed into buffers and then are combined time-adjusted streams prior to being combined into a single compressed, composite stream for transmittal to an end user.

Turning now to the claim language, claim 1 calls for an input interface that receives first and second media streams that each include a streaming video portion. A controller determines a "variable transmission delay for the first and second media streams from the first and second media sources to the input interface and performs the selective retrieving based on the

determined variable transmission delays." Additionally, the controller mixes the retrieved time-adjusted streams "into a composite media stream wherein the first and second time-adjusted streams are synchronized based on time." The combined teaching of Freeman and Schuster fails to teach or suggest each of these limitations of claim 1.

First, Freeman fails to teach the input interface of claim 1 which receives first and second media streams that have been transmitted over a communications network from "a first and a second media source." Freeman is cited at paras. [0013] to [0016], [0020], and [0048] for teaching such an input interface. However, in paras. [0013] to [0016], Freeman discusses an output interface used to transmit multiplexed signals over a cable or satellite system for receipt at an end user's location. The end user's location is not described as receiving streams from more than one media source. In para. [0020], Freeman teaches multiple signals are transmitted (in multiplexed, compressed form) to the end user's location but again this is from a single transmission source. In para. [0048], Freeman states that prior systems transmitted the signals over separate channels, but the Freeman system instead multiplexes the compressed, digital signals to only use a single transmitter 5 and, as a result, teaches the use of a single media source and not "a first and a second media source" as called for in claim 1. Hence, Freeman fails to teach at least this element of claim 1.

The October 6, 2006 Advisory Action argues that Freeman does teach this limitation of claim 1 in paragraph [0020]. However, in paragraph [0020], Freeman discusses an interactive conversation occurring with a video signal that may include "field synchronized multiple camera angles" which at best mentions synchronizing cameras on location and not receiving video streams from multiple sources. The last sentence of paragraph [0020] discusses the use of "various video signals not related in real-time and content," which is in direct contrast to the issues being addressed by Appellant's claimed system that acts to synchronize streams that are often related in real-time (e.g., may be two live media streams). Appellant could, therefore, find no teaching in Freeman to support a rejection of claim 1 in the rebuttal provided in the Advisory Action.

Second, Freeman fails to teach first and second data buffers for storing the data packets of the first and second media streams. As discussed by Freeman in paras. [0124] and [0125], a user selects via host processor 360 a particular one of the multiplexed video signals at the user location and only the selected video is "buffered in a standard video buffer and then output for decoding." Also, in paras. [0084] and [0085], Freeman teaches only one video stream is buffered and then decoded when there is enough information "to ensure continuous playback" of the selected one of the video signals. Hence, Freeman also fails to show the first and second data buffers called for in claim 1. The Advisory Action does not rebut this argument or provide additional citations to Freeman to show how/where this limitation is shown or suggested by the reference.

Third, the controller called for in claim 1 is not shown by Freeman because Freeman fails to show a controller configured "for selectively retrieving the data packets of the first and second media streams" from the buffers to "form a first and a second time-adjusted stream." Freeman teaches that only a single stream is stored in the end user's buffer and there would be no reason to selectively retrieve the packets to form time adjusted streams. Further, Freeman cannot teach forming first and second streams because only one stream is withdrawn from its buffer and then decoded. The portions of Freeman cited in the Office Action all appear to occur at the source and discuss time synchronizing with encoders 312 and not after received and buffered at the end user's location. For this additional reason, Freeman fails to teach each limitation for which it is cited.

The October 6, 2006 Advisory Action states that the Examiner disagrees with this characterization of Freeman and cites Freeman at para. [0100] as teaching this claim limitation. Appellant strongly disagrees because at para. [0100] Freeman calls for the video encoders 312 to be "time synchronized" such that splice points in transmitted video can be used for splicing. This fails to teach a controller that determines variable transmission delays in two received and buffered media streams but instead (as discussed above) involves splicing or switching occurring at a single transmitting device (e.g., where does Freeman discuss delays over a network that are adjusted for by the encoders 312?). In para. [0112], Freeman summarizes that "seamless switching at the decoder is facilitated at the encoder 312 by time synchronizing the signals, time

locking the encoders and creating a time gap 340 to each of the digital video streams which represents the difference between the encode rate and the channel capacity." This is a very different process than called for in claim 1 and fails to teach forming time-adjusted streams because the encoded streams are not time adjusted based on variable transmission delays but are instead encoded in a synchronized manner. Beginning at para. [0114], Freeman discusses operation of the "Reception Sites" and, significantly, is silent on adjusting for delays that may vary among transmitted media streams from differing sources. To teach the controller limitation of claim 1, Freeman cannot simply teach synchronizing two encoders but must teach synchronizing two media streams after they have been transmitted over a communication network, but Freeman fails in this regard. Hence, the Advisory Action's reasons for maintaining the rejection of claim 1 do not address Appellant's argument, and Appellant requests that the rejection of claim 1 be reversed.

Fourth, the controller "determines a variable transmission delay for the first and second media streams from the first and second media sources to the input interface and performs the selective retrieving based on the determined variable transmission delays." Freeman fails to teach selective retrieving from the end user buffer and clearly, not based on a determined variable transmission delay. The Office Action agrees that Freeman fails to show such a determination and that selective retrieval is performed based on such a determination.

Schuster is cited for overcoming this deficiency at col. 7, lines 14-67, col. 8, lines 17-56, and col. 12, lines 10-67. Schuster teaches the use of synchronized clocks at a transmitting device and a receiving device to remove jitter from a single media signal such as by providing "substantially the same inter-packet time spacing at the receiving end delay period for a sequence of packets." However, there is no discussion of determining such a delay from multiple sources and then using such a transmission delay to retrieve media signals from a buffer based on such a determination to retrieve time-adjusted signals. As discussed above, Freeman fails to teach such selective retrieval as it only shows one selected signal being buffered, and, hence, the combination of Schuster and Freeman would only result in the same inter-packet time spacing being applied at the user location to the one selected signal as was applied to the single media

source of Freeman. The combination of the two references would not result in the claimed invention. The Advisory Action fails to address this portion of Appellant's argument.

Fifth, Freeman fails to show "mixing" of video streams to provide a composite media stream in which the streams are "synchronized based on time." In claim 1, the controller further is configured for "mixing the first and second time-adjusted streams into a composite media stream wherein the first and second time-adjusted streams are synchronized based on time." The Office Action cites Freeman for teaching the mixing at paras. [0013] to [0016], para. [0020], para. [0048], paras. [0099] and [0100], and paras. [0205] to [0207]. However, as discussed above, **<u>Freeman only teaches multiplexing of signals and not mixing</u>**. The difference between these two functions was discussed in the September 2005 Amendment submitted by Applicant. Further, the multiplexing occurs at the transmittal source such as with multiplexer 324 prior to transmission by transmitter 328. The receiving system shown for example in Figure 7 does not include a controller that selectively retrieves buffered data packets to form time adjusted streams and then mixes the two streams into "a composite media stream wherein the first and second time-adjusted streams are synchronized based on time." Instead, a user selects one of the signals in the multiplexed stream and a demux/demodulator 372 processes the packets for display via video device 388. The Advisory Action fails to provide a specific citation showing where Freeman shows mixing as called for rather than simple switching. For this additional reason, the combined teaching of Freeman and Schuster fails to teach or suggest the system of claim 1, and Appellant requests that the rejection of claim 1 be reversed for this reason alone or when considered in combination with the other stated deficiencies of the two references.

Claims 3-6, 8, and 11-14 depend from claim 1 and are believed allowable over Freeman and Schuster at least for the reasons provided for allowing claim 1. Further, claims 3 and 4 are addressed to cases where the two received media streams have differing compression formats and handling the streams to allow mixing by decoding into compatible forms. There is no discussion of decoding the two streams into formats that are compatible prior to storage in buffers in Freeman (or Schuster). In the September 18, 2006 Amendment, Appellant asked the Examiner to point to a device in Freeman that decodes video streams that have two differing compression formats or to withdraw the rejection. The Advisory Action mailed in response was

silent regarding this request. Freeman teaches that a variety of compression formats may be used by the encoders 312 but does not teach that they differ (e.g., that two encoders would encode under different standards and that a reception device would process to neutral forms), and this would likely not make sense since their output could not then readily be multiplexed for transmittal. After receipt at the end user's location, Freeman teaches that only one signal is buffered and it is buffered in a compressed form to save memory space. There is no teaching that two streams are decoded and that such received streams had differing compression formats. Schuster is not cited for providing teaching relevant to the limitations of claims 3 and 4. For this additional reason, claims 3 and 4 are believed allowable over Freeman and Schuster.

Independent claim 15 includes limitations similar to claim 1. Hence, the reasons provided for allowing claim 1 over Freeman and Schuster are believed applicable to claim 15. Additionally, claim 15 includes limitations similar to dependent claims 3 and 4, and the reasons for allowing claims 3 and 4 over Freeman and Schuster are applicable to claim 15. Specifically, the Examiner was requested to show in Freeman where a decoder decodes two video streams into compatible formats (which is useful for facilitating mixing which as discussed with reference to claim 1 is not performed by Freeman). Applicant could find no discussion of such functions in the description of the decoder 372 shown in Freeman's Figure 7, and, as discussed, the Advisory Action failed to discuss Appellant's distinguishing remarks regarding claim 15.

Claims 17-19 depend from claim 15 and are believed allowable over Freeman and Schuster at least for the reasons provided for claim 15. Further, claim 18 calls for concurrent delivery of time-adjusted first and second streams in a composite media stream, and, as discussed above for video streams, this typically involves a resolution or even pixel-by-pixel mapping or the like not shown or even suggested by Freeman as this reference fails to teach mixing of video streams and instead discusses multiplexing at a source where mixing on a pixel level would not be required. For these additional reasons, claim 18 is believed allowable over Freeman and Schuster.

Independent claim 20 was rejected for substantially the same reasons as provided for claim 1. Hence, the reasons for allowing claim 1 over Freeman and Schuster are believed

applicable to claim 20. Additionally, claim 20 calls for the two media streams to include data packets from one or more video files and adjusting the two streams including "matching the data packets of the first and second media streams based on transmittal times from the first and second media sources." Freeman fails to discuss matching the streams it multiplexes based on transmittal times from original sources such as elements 300 but instead teaches synchronizing the clocks of encoders 312 immediately prior to multiplexing with device 324 and then transmitting the multiplexed signal.

Further, in claim 20, a "synchronized media stream" is created "by mixing the first and the second media streams" such that the streams are presented "concurrently." As discussed with reference to claim 1, Freeman fails to show any mixing of video streams but only discusses multiplexing (and, further, this multiplexing is done prior to transmittal over the Freeman network), and as a result, the reference cannot teach or suggest claim 20 because it does not show a stream that comprises the mixed first and second streams. Further, claim 20 requires matching of data packets of the two streams, and this is not shown by Freeman for two video streams. The multiplexed streams in Freeman are not described as presenting signals concurrently, but instead, in Freeman, a selected signal is buffered and then later encoded for presentation. Hence, claim 20 is not suggested by Freeman, and Schuster is not cited for overcoming these deficiencies in Freeman. The Advisory Action fails to address these additional reasons for allowing claim 20 when compared with claim 1. For these reasons, Appellant requests that the rejection be reversed as it is unsupported by these references.

Claims 23 and 25-30 depend from claim 20 and are believed allowable over Freeman and Schuster for at least the reasons provided for allowing claim 20. Further, claims 25 and 26 have limitations similar to claims 3 and 4 and are believed allowable for the reasons provided for these claims.

**Rejection of Claims 7, 9, and 10 Under 35 U.S.C. §103 is Improper Based on Freeman, Schuster, and Hejna**

Claims 7, 9, and 10 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Freeman and Schuster as applied to claim 5 and further in view of U.S. Pat. No. 6,934,759 ("Hejna"). Claims 7, 9, and 10 depend from claim 1 and are believed allowable over Freeman and Schuster at least for the reasons provided for allowing claim 1 over these references. Hejna does not overcome the deficiencies of these two references discussed above with reference to claim 1 (and claim 5) and is not cited by the Examiner for providing such teaching relevant to claim 1. Therefore, claims 7, 9, and 10 are believed allowable over the teaching of these three references.

**Conclusion**

In view of the above remarks, the pending claims are believed allowable and the case in condition for allowance. Appellant respectfully requests that the rejections of all pending claims be reversed.

Respectfully submitted,

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## VIII. CLAIMS APPENDIX

1. A synchronization system for time-based synchronization of streaming media transmitted over a communications network, comprising:

an input interface adapted for linking to the communications network to receive a first and a second media stream, wherein the first and second media streams comprise a plurality of digital data packets being transmitted over the communications network from a first and a second media source, respectively, and wherein the first and the second media streams each include a streaming video portion;

a first data buffer for storing the data packets of the first media stream;

a second data buffer for storing the data packets of the second media stream; and

a controller communicatively linked to the first and the second data buffers for selectively retrieving the data packets of the first and second media streams to form a first and a second time-adjusted stream, wherein the controller determines a variable transmission delay for the first and the second media streams from the first and second media sources to the input interface and performs the selective retrieving based on the determined variable transmission delays;

wherein the controller is further configured for mixing the first and second time-adjusted streams into a composite media stream wherein the first and second time-adjusted streams are synchronized based on time.

3. The system of claim 1, wherein the streaming video portion of the first media stream is compressed based on a first compression format and the second media stream is compressed based on a second compression format, the second compression format differing from the first compression format.

4. The system of claim 3, further including a decoding device between the input interface and the first and second data buffers for processing compressed first and second media streams into a first decoded stream and a second decoded stream, respectively, for storage in the first data buffer and the second data buffer, wherein the first decoded stream and the second decoded stream have compatible formatting.

5. The system of claim 1, wherein the controller forms the composite media stream by combining the first and the second time-adjusted streams such that the second time-adjusted stream has a first data packet positioned at a start time adjacent a last data packet of the first time-adjusted stream positioned at an end time.

6. The system of claim 5, wherein the controller is communicatively-linked to an external timing reference for receiving a reference time value, and wherein the controller is adapted for using the reference time value to determine the start time and the end time.

7. The system of claim 5, wherein the controller determines a length of the first media stream, compares the length with the end time and the variable network delay, computes an edit length for the first media stream, and compresses or lengthens the first media stream to form the first time-adjusted stream, whereby the last data packet coincides with the end time.

8. The system of claim 1, further including a data parsing device in communication with the input interface configured for retrieving time data from the first and the second media streams and for transmitting the time data to the controller, wherein the controller uses the time data to determine variable transmission delays.

9. The system of claim 7, wherein the controller is adapted to create media server control signals based on the determined variable transmission delays and to transmit the signals over the communications network to the first and the second media sources to control transmission variables of the first and second media streams.

10. The system of claim 9, wherein the transmission variables are selected from a group consisting of transmission timing, transmission rate, and transmission length.

11. The system of claim 1, wherein the composite media stream comprises a streaming video portion having picture-in-picture or side by side portions formed with the data packets of the first and the second time-adjusted streams.

12. The system of claim 1, wherein the controller combines the first media stream and second media stream in the composite media stream such that a data packet transmitted in the first media stream from the first media source at a transmission time is matched with a corresponding data packet in the second media stream transmitted from the second media source at the transmission time.

13. The system of claim 12, wherein the combining is performed by the controller by selecting a transmission rate for the first and the second media streams to correct for the determined variable transmission delays.

14. The system of claim 1, further including an output interface for transmitting the composite media stream from the controller over the communications network and including an end-user node linked to the communications network for receiving the composite media stream, wherein the end-user node comprises a synchronizer for determining a variable transmission delay between the controller and the end-user node and for performing time-based correction of the composite media stream to adjust for the variable transmission delay.

15. An apparatus for synchronizing media streams transmitted over a communication network, comprising:

an input interface linked to the communications network and configured for receiving a first and a second media stream transmitted by a first and a second media source, respectively, wherein the first media stream comprises a plurality of data packets of a video stream encoded to a first compression standard and the second media stream comprises a plurality of data packets of a video stream encoded to a second compression standard differing from the first compression standard;

a decoder for decoding the first and the second media streams into a first and a second intermediate media stream, respectively, wherein the first and second intermediate streams are compatibly formatted;

a streaming media processor for mixing the first and the second intermediate-format media streams into a composite media stream encoded according to an output compression standard; and

a controller in communication with the input interface and the streaming media processor adapted for determining a variable transmission delay for the first and the second media streams based on a transmission time for a data packet of the first media stream and a time of receipt at the input interface of the data packet and on a transmission time for a data packet of the second media stream and a time of receipt at the input interface of the data packet.

17. The apparatus of claim 15, wherein the controller is further configured for adjusting the first intermediate-format media stream based on the variable transmission delay of the first media stream and for adjusting the second intermediate-format media stream based on the variable transmission delay of the second media stream to create a first and a second time-adjusted stream.

18. The apparatus of claim 17, wherein the processor combines the first and second time-adjusted stream to form the composite media stream with the first media stream data packet and the second media stream data packet being positioned for concurrent delivery.

19. The apparatus of claim 17, wherein the time of receipt is determined based on a time reference signal received from an external timing reference.

20. A method for time-based synchronization of two or more media streams transmitted over a data communications network, comprising:

receiving a first media stream comprising a plurality of data packets from one or more video files transmitted over the communications network by a first media source;

receiving a second media stream comprising a plurality of data packets from one or more video files transmitted over the communications network by a second media source;

retrieving timing data from the first and second media stream;

comparing the timing data with a reference time to determine a first and a second transmission delay value;

adjusting the first and the second media streams to correct for the first and the second transmission delay values, wherein the adjusting includes matching the data packets of the first and the second media streams based on transmittal times from the first and the second media sources; and

creating a synchronized media stream by mixing the first and the second media streams, wherein the first and the second media streams are presented in the synchronized media stream concurrently.

22. The method of claim 20, wherein the adjusting includes creating a first and a second control signal in response to the first and the second transmission delay values, respectively, and includes transmitting the first and the second control signals to the first and the second media source to control transmittal of the first and the second media streams.

23. The method of claim 20, storing the data packets of the first media stream in a first data buffer and the data packets of the second media stream in a second data buffer and wherein the adjusting includes selectively retrieving the data packets of the first media stream from the first data buffer to correct for the first transmission delay value and selectively retrieving the data packets of the second media stream from the second butter to correct for the second transmission delay value.

25. The method of claim 20, wherein the first media stream is encoded to a first compression standard and the second media stream is encoded to a second compression standard, and further including forming a first intermediate data stream by decoding the first media stream and forming a second intermediate data stream by decoding the second media stream, wherein the first and second intermediate data streams are compatibly formatted.

26. The method of claim 25, wherein the first compression standard differs from the second compression standard such that the first and second media stream are incompatible prior to the decoding to be combined into a single media stream.

27. The method of claim 20, wherein the synchronized media stream concurrently provides two screens corresponding to each of the first and second media streams.

28. The method of claim 27, wherein the two screens are arranged as split screens.

29. The method of claim 27, wherein the two screens are arranged as picture-in-picture with a first of the two screens provided within a second of the two screens.

30. The method of claim 20, wherein the first media stream comprises a first live webcast and the second media stream comprises a second live webcast.

## IX. EVIDENCE APPENDIX

No copies of evidence are required with this Appeal Brief. Appellant has not relied upon any evidence submitted under 37 C.F.R. §§ 1.130, 1.131, or 1.132.

## X. RELATED PROCEEDINGS APPENDIX

There are no copies of decisions rendered by a court or the Board to provide with this Appeal as there are no related proceedings.